ACOUSTICAL TESTING LABORATORY

NASA Glenn Research Center
Acoustical Testing Laboratory

ATL Test Readiness Review Checklist

The Test Readiness Review (TRR) is conducted prior to the scheduled start of an ATL acoustic emissions test. The purpose of the TRR is to verify that all required actions by the ATL, the Customer, and Quality Assurance have been completed so that the test can start on time, proceed safely and efficiently and be completed successfully within the allowed timeframe.

TRR Name: _____ (i.e. ATL TRR-01-04)
Date: _____
Attendance sheet is attached.

1. _____ The test articles have been identified as: [1]
   a. _____ Qualification/Prototype*
   b. _____ Protoflight*
   c. _____ Flight*
   d. _____ Developmental/Engineering Model**

   Note: * = TRR is required.
   ** = TRR is optional

2. _____ Test articles (require) (do not require) following ESD protection procedures.
   a. _____ The Customer's ESD protection policies are more stringent than the ATL's, the Customer's policies will be followed.
   b. _____ The Customer's ESD protection policies are less stringent than the ATL's, the ATL's policies will be followed.
3. _____ Test articles (require) (do not require) following contamination control procedures.
   a. _____ The Customer's contamination control policies are more stringent than the ATL's, the Customer's policies will be followed.
   b. _____ The Customer's contamination control policies are less stringent than the ATL's, the ATL's policies will be followed.

4. _____ An accurate (realistic) testing schedule including test set up, testing, data review, and tear down has been generated.
    a. _____ Test articles and support equipment will arrive at the ATL on (m/d/y) _____ at _____ (am) (pm).
    b. _____ Test set up will be completed by no later than (m/d/y) _____ at _____ (am) (pm).
    c. _____ Testing will begin no later than (m/d/y) _____ at _____ (am) (pm).
    e. _____ Preliminary review of the test data will take place before tear down is started. The allotted time for the preliminary review of the test data is _____ hrs.
    f. _____ Tear down will begin no later than (m/d/y) _____.
    g. _____ Test articles and support equipment will be removed from the ATL by no later than (m/d/y) _____.
    h. _____ Safety and security briefing scheduled for (m/d/y) _____ at _____ (am) (pm).
    i. _____ Testing will be performed on the dates stated above.
        I. _____ ATL will support this schedule.
        II. _____ Customer will support this schedule.
        III. _____ Quality will support this schedule.
5. _____ A clear and accurate description of this test and its relationship to other tests and verification activities has been established.
6. _____ Subsequent processing will not invalidate ATL test results (i.e. will the test article undergo vibration testing, will it be disassembled).
7. _____ Safety permits have been issued for the test article.
    a. _____ Safety has reviewed all hazardous operations and/or hazardous materials, where applicable.
    b. _____ Safety assessment of the test set up has been conducted and approval obtained, where applicable.
8. _____ Safety permits have been issued for the facility.
    a. _____ Safety has reviewed all hazardous operations and/or hazardous materials, where applicable.
9. _____ Emergency response procedures such as evacuation, fire, medical emergency are in place.
10. _____ ATL test plan, _____, has been submitted and approved by appropriate organizations.
    a. _____ Test objectives and acoustic emission requirements have been detailed.

b. _____ Test procedures are sufficient to accomplish these objectives.

c. _____ All data acquisition instrumentation and equipment assigned to this test will be in calibration during the period of the test.

d. _____ Test team assignments have been made with clearly defined responsibilities and authority.

e. _____ Names and roles of the assigned ATL personnel have been officially transmitted to the Customer and Quality Assurance.

f. _____ ATL personnel are trained and competent to perform the test.

11. _____ Customer's test plan, _____, has been submitted and approved by appropriate organizations.

a. _____ The test articles and support equipment (including both hardware and software) have been baselined and identified by revision.

b. _____ Operational procedures have been baselined and maintained under a suitable form of document configuration control.

c. _____ Functional testing has been identified; procedures are baselined and will be completed prior to testing.

d. _____ Test article test configurations are baselined and identified in detail.

e. _____ Test article test configurations accurately replicate and/or conservatively bound the acoustic emissions of all on-orbit operational configurations.

I. _____ Test matrix has been submitted to and approved by appropriate organizations.

II. _____ Test matrix has been officially transmitted to the ATL.

f. _____ Documentation of the test articles and support equipment has been officially transmitted to ATL and Quality Assurance.

g. _____ All applicable Customers' support equipment will be in calibration during the period of the test (as applicable).

h. _____ Transportation, Lifting, and Integration procedures for the test articles and support equipment have been baselined as required.

i. _____ Support team assignments have been made with clearly defined responsibilities and authority.

j. _____ Names and roles of the assigned Customer personnel have been officially transmitted to ATL and Quality Assurance.

k. _____ Support personnel are trained and certified for the test.

12. _____ Test set ups and testing sequences are logical and provide protection for personnel and hardware.

13. _____ If applicable, Customer has a process in place for documenting personnel access to the test article or support equipment (for example, personnel must have the approval of the test conductor prior to accessing the test article).

14. _____ If applicable, abort procedure has been baselined, reviewed, and agreed upon by ATL, Customer, and Quality.

15. _____ Overhead crane will be in certification for this test (if applicable).

16. _____ ATL Facilities are prepared for the test.

a. _____ Test chamber has been or will be properly configured (i.e. anechoic, hemi-anechoic).

b. _____ Data acquisition system has been configured.

c. _____ Instrumentation and equipment has been identified and is ready for set up.

d. _____ Control room has been configured.

e. _____ Sufficient table space, chairs, and electrical power have been provided for ATL, Customer, and Quality Assurance Personnel.

f. _____ Customer has been assigned a dedicated phone and unique phone number (3-2065) if required.

g. _____ If needed, arrangements have been made to have ATL, Customer, and Quality Assurance personnel set up outside of the control room in the hallway of Building 333 Annex.

h. _____ A compatibility check between the ATL facilities and the Customer's test articles and support equipment has been performed (i.e. if the Customer has a piece of support equipment requiring a unique electrical outlet then the ATL has had that outlet installed in its facilities).

i. _____ ESD protection and contamination control (i.e. smocks, grounding wrist straps, and warning signs) equipment is ready as required.

17. _____ Test articles and support equipment have passed functionality testing.

18. _____ Consumables (i.e. compressed gas bottles, batteries, fuel) are available with adequate reserves.

Quality Assurance

19. _____ Quality Assurance personnel have been assigned with clearly defined responsibilities and authority as required.
20. _____ Names and roles of the assigned Quality Assurance personnel have been officially transmitted to ATL and the Customer.
21. _____ Anomaly resolution “contact list” (i.e. the list of decision makers) has been established. (If there is a problem do we need to call the project manager, lead engineer, etc?)
22. _____ Open work which must be completed prior to testing, including set up, calibration, training, drawing release, procedure updates, support equipment, etc. have been identified and tracked as constraints to testing.
23. _____ Open test article, software, and support equipment quality assurance documentation, including discrepancies, problem reports, and open inspection records, are identified. (If there are open issues then the attendees are to be polled for their input.)
24. _____ A process for management of constraints is in place that prevents specific tests, or sequences of tests from being performed until the constraint is relieved by positive action. There are no outstanding PRACAs that affect this test.
25. _____ Actions from previous reviews including action items from previous ERBs, test planning meetings, and other TRRs are closed.
26. _____ The procedure for documenting Non-Conformances has been established per Quality procedures.
27. _____ Where applicable, equipment calibration post-test procedures are defined (i.e., per GRC-P3.11.1) for assessing and documenting impact of out-of-tolerance calibration data and minimizing the Quality/Safety risk(s) caused by inaccurate measurement data.

References

1. “ATL Flight Hardware and Verification Testing Policies.” ATL Supporting Procedures Notebook.

Action Items:

1. _____

   _____

2. _____

   _____

3. _____

   _____

4. _____

   _____

5. _____

   _____

Comments:

1. _____

   _____

2. _____

   _____

3. _____

   _____

4. _____

   _____

5. _____

   _____

Go? _____ No Go? _____

Project Manager/Lead Engineer: _____ Date: _____

ATL Lab Manager: _____ Date: _____

Product Assurance (Contractor/NASA): _____ Date: _____

Attendance Sheet
TRR Name: _____
Date: _____

Name	Title	Organization	Phone